
Appendix 3.7

Calculation of Emissions from Typhoon Shelter

Emission in To Kwa Wan Typhoon Shelter

Auxiliary Engine during idling:

Population	=	60
Engine Power(kW)	=	82 kW
Load Factor ⁽¹⁾ (%)	=	43 %
Activity time (hr)	=	1 hr
Total area of To Kwa Wan Typhoon Shelter (m ²)	=	233200 m ²
Sulphur Content Correction Factor ⁽³⁾	=	0.033

	Emission Factor ⁽²⁾	Corrected Emission Factor ⁽⁴⁾	Emission Rate per barge	Total Emission Rate	
	g/kWh/barge	g/kWh/barge	g/hr/barge	g/s	g/s/m ²
NO _x	10	10.00	352.6	5.88	2.52E-05
SO ₂	1.3	0.04	1.53	0.03	1.09E-07
RSP	0.4	0.01	0.47	0.01	3.36E-08
FSP ⁽⁵⁾	0.388	0.01	0.46	0.01	3.26E-08

Notes

(1) Table 3-4 of Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories, ICF (2009)

(2) Table 3-8 of Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories, ICF (2009)

(3) According to "Air Pollution Control (Marine Light Diesel) Regulation" (Cap. 311Y) requires the fuels to be with sulphur content not exceeding 0.05%. The sulphur content (1.5%) is used in Table 3-8 Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories, ICF (2009). Therefore, the sulphur content correction factor is $0.05/1.5 = 0.033$.

(4) Multiplied by sulphur content correction factor for SO₂, RSP (PM₁₀) and FSP (PM_{2.5}).

(5) According to ICF (2009), FSP should be estimated based on 97% of RSP.